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CHANGES OF PLUMAGE IN BUTEO SWAINSONI.

BY E. S. CAMERON.

My attention has just been drawn to some observations of Mr. P. B. Peabody on the above subject in 'The Condor' for November-December, 1907. I am sorry to refer to them at such a late date, but the fact is I have only recently seen this number of the magazine through the courtesy of one of its editors. Mr. Peabody concludes an interesting article on Prairie Falcons with the following remarks: "As for albinism, however, the writer is inclined to believe Mr. Cameron in error (see 'The Auk,' July, 1907) in believing that the Swainson Hawk normally blanches with age. I have never seen but one such (in Kansas, May, 1907); yet I have seen many melanists. Moreover, Mr. Cameron has seen hundreds of normals to my one; yet he, by his own admission (*loc. cit.*), has never seen but two blanched Swainson Hawks!" This is entirely to misquote my statement and misinterpret my meaning. What I really wrote in 'The Auk' (Vol. XXIV, p. 262) was as follows: "In color, as far as could be determined, these buzzards exhibited every shade of brown, while some inclined to a more chestnut hue. Others again appeared black, or almost black, showing the melanistic form, and a very few individuals were a uniform lavender, or bluish ash, like the male Marsh Hawk (*Circus hudsonius*). I have never obtained but two birds in this rare dress, but I feel satisfied it is the one ultimately assumed by the adult male, which through a long succession of browns moults into a mature plumage of lavender with white throat spot. Of this cinereous phase I can find no reference in ornithological works, where the old males are invariably, but I believe quite erroneously, described as brown. The immature birds, both male and female of the same age, also exhibit endless difference in coloration, and the attempt to trace their progress to maturity has perplexed even so eminent an authority as Dr. R. Bowdler Sharpe who states (*in lit.*): 'The changes of plumage in these buzzards are terribly difficult to follow.'"

As I am not a collector, either of skins or eggs, I scarcely ever shoot a bird, least of all, in the breeding season. When I wrote "I have never obtained but two birds," etc., I meant that I had

only shot two specimens of this type, certainly not that I had only seen two, as Mr. Peabody phrases it, and in the line immediately above I distinctly state that I did see a very few individuals of a uniform lavender on the particular occasion referred to. At the same time I admit that the expression "have never obtained" is open to misconstruction, and am glad to have this opportunity of explaining it. During my nineteen years' residence here, I have seen (as Mr. Peabody says), many hundreds of these hawks,¹ and amongst them not two but a considerable number of bluish ash or lavender examples. I have no doubt that I could easily have obtained a dozen skins of the latter, and also the complete series necessary to show the progress to maturity from the brown and chestnut fledgling to the adult lavender colored male.

This color phase has no more connection with albinism than has the cinereous shade of the adult Marsh Hawk, and is accomplished by a normal succession of moults. In my opinion *B. swainsoni* requires four or five years to assume the full adult dress, as is the case with the Golden Eagle (*Aquila chrysaetos*) and others of the family. I have never myself seen an albino example of Swainson's Hawk.

Some of these hawks breed regularly in my vicinity every year. Two pairs nested here this summer. In June, 1893, a pair made their nest in a white ash tree, in the fenced pasture adjoining my ranch. Both of these were shot. The male was of the light cinereous form with white throat spot, identical with the one obtained in April, 1890, and now in the British Museum. In 1899, I had three nests under constant observation and made voluminous notes. The three cock birds were all quite different, but more or less of a brown coloration, and owing to my intervention none of the hawks were molested. One of these males was as described by Coues,—with the primaries and tail feathers "strongly slate-colored," the whole of the underparts white, streaked with chestnut, and the white throat "immaculate." I have supposed this plumage to be intermediate between the extreme dark brown and bluish gray forms. Dr. Coues, who examined forty specimens, had obviously never come across the light, slate-colored birds. He

¹ On a rough estimate I must have seen about 2500 of this species at the migration periods.

might easily have missed them for he writes: "I took no specimens in the melanistic state of plumage in which the bird has been described as another supposed species (*B. insignatus*); and only saw one in which the entire underparts looked as dark, when the bird was sailing over me, as the pectoral band of the adult female is."¹ These melanistic birds are by no means uncommon. In the great irruption of April, 1890, I saw numbers of them. The above mentioned writer also states (*op. cit.*): "In both sexes, and at all ages the eye is brown, but of varying shade. I have seen no approach to a yellow iris." This is true of all the brown males, but the bluish ash specimens, to which I refer, have brownish yellow irides, with orange legs, feet and cere. The females and immature birds on the other hand, have pale hazel irides, the legs, feet, and cere being chrome yellow. The eyes are blue gray in the newly fledged young, which color probably changes before the end of the year.

Among the twelve examples shot in April, 1890, out of one flock eleven were females and immature birds while the 12th, of the lavender type, appeared to be an adult male. As previously stated six of the skins were sent to Dr. P. L. Sclater who wrote (referring to himself and Dr. R. Bowdler Sharpe): "We have come to the conclusion that they are all correctly determined."

Since learning more about these birds, I regret not having obtained and forwarded to him a large series with a view to clearing up the difficulties connected with their mutability of plumage. Subsequently to April, 1890, when the immense buzzard host was observed, I have met with other small migrations. It does not surprise me that only a small percentage of cinereous males are seen, as in all large bird flocks of different sexes and ages the immature young greatly predominate. Nevertheless, out of the fourteen examples shot by me two were cinereous birds, which gives a proportion of fourteen percent. without taking the females into consideration. If Swainson's Hawk employs similar methods of nest building, and meets with similar persecution elsewhere as in Montana, it is no wonder that few birds reach maturity. I have never known these hawks to take poultry of any kind although they are frequently about ranches. This forbearance, however,

¹ Birds of the Northwest, 1874, p. 357.

does not save them in my neighborhood, where all large hawks, lumped together under the name of hen-hawk, have their nests destroyed, and their young ruthlessly stoned at sight, even if the parent birds escape being shot. Swainson's Hawk is the worst sufferer of any, because it builds conspicuously in a low tree on the prairie right in the way of passing ranchmen and others, whereas the Red-tail has its nest at an inaccessible height and generally escapes molestation. Like the last mentioned bird, a pair of Swainson's Hawk will return to the same tree year after year and repair their old nest, nor will they build a new one unless the other should be entirely demolished.

If the light-colored birds referred to are not the adult males as I maintain, what then are they? While *B. swainsoni* is well known to show every variation of brown, it is rather difficult to believe that some individuals eventually become bluish ash and others do not. I hope to return to the subject at a future date when I can submit skins in support of my contention.

GENERAL NOTES.

Breeding of the Loon in Pennsylvania.—It gives me considerable pleasure to be able to add the Loon (*Gavia imber*) to the list of birds known to breed in Pennsylvania. At various times unauthenticated rumors of this bird's occurrence in summer have been heard, but my record is positive and extends the breeding range of the Loon a number of miles to the southward.

The nest in question was found by Mr. Chas. Homan in late May on a large lake near Bushkill, Monroe County. Mr. Homan, who is perfectly familiar with the bird, has kindly favored me with the details and, moreover, accurately described the birds and the eggs to the writer.

The nest was located on a mass of floating rubbish about fifty feet from the shore of the lake. The birds were frequently seen about the nest and though the two eggs were frequently handled by Mr. Homan they were not deserted. The young hatched in safety but disappeared a short time afterward, although the old birds are still on the pond (July 26).

Not knowing the rarity of the nest he had found, Mr. Homan failed to secure the eggs but offered to take one of the birds for me. However, I persuaded him to protect them, and it is to be hoped that the birds will return next year in safety.—RICHARD C. HARLOW, *LaAnna, Pike Co., Pa.*